



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,361	12/12/2003	Kenji Yamagata	00862.023377	8701

5514 7590 04/20/2005

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,361

Applicant(s)

YAMAGATA ET AL.

Examiner

Sylvia R. MacArthur

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 17-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/19/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-16, drawn to a processing apparatus, classified in class 156, subclass 345.11.
 - II. Claim 17-32, drawn to a processing method, classified in class 216, subclass 91.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process could have been performed a different apparatus one that is not perpendicular to the oscillation source.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Damond Vadnais on April 6, 2005 a provisional election was made with traverse to prosecute the invention of the apparatus, claims 1-16.

Affirmation of this election must be made by applicant in replying to this Office action. Claim 17-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

Art Unit: 1763

currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 12, 13, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kiyobumi (JP 10-223585).

Regarding claim 1: Kiyobumi (JP 10-223585) teaches a processing apparatus which processes a substrate by a process solution, comprising a process container 10 which stores the process solution, a holding mechanism (wafer rotating rods 11) which holds the substrate in the process container, 11 also anticipates the structure which is configured to rotate the substrate held by a holding mechanism, and an oscillation source Z(oscillation layer 30)which is arranged at a predetermined position in a direction perpendicular to a surface of the substrate held by the holding mechanism to supply an oscillation to the substrate.

Regarding claims 2 and 3: The wafer rotating rods 11 are rotated by driving forces from a motor 19 to transmit a rotating force to the substrate by a solid member.

Regarding claim 12: The tank 10 (chamber exposes the process solution to form a low-pressure environment.

Art Unit: 1763

Regarding claim 13: Figures 1 and 2 illustrate that chamber 100 accommodates tank 10 and a low-pressure environment is formed around the process container.

Regarding claim 16: Kiyobumi teaches a processing apparatus which processes a substrate by a process solution, comprising a process container 10 which stores the process solution, and chambers 100 and 10 form a low pressure environment in a space where the process solution is exposed.

8. Claims 1, 4-6 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fumio et al (JP 10-242103).

Regarding claim 1: Fumio et al (JP 10-242103) teaches a processing apparatus which processes a substrate by a process solution, comprising a process container (tank 10) which stores the process solution, a holding mechanism 41 which holds the substrate in the process container;

An oscillation sources 31 which is perpendicular to the surface of the substrate 40.

Regarding claims 4, 5, 14: Adjuster 32 is configured to rotate the substrate by forming a flow of the process solution. The structure is configured to rotate the substrate by forming one of a rotational flow and a vortex flow of the process solution in the process solution.

Regarding claim 6: Supply portion 21 supplies the process solution to the tank 10 and 31 (ultrasonic wave generator) is provided to rotate the substrate by the flow of the process solution.

Art Unit: 1763

Fumio et al teaches a processing apparatus which processes a substrate by a process solution, comprising a process container (tank 101) which stores the processing solution, a holding mechanism 105.

Claim Rejections - 35 USC § 103

9. Claims 7-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyobumi or Fumio et al in view of Kiyobumi (JP 2000-133632).

The teachings of Kiyobumi and Fumio et al were discussed above.

Both fail to teach removing bubbles.

Kiyobumi teaches desecration treatment during processing.

Regarding claims 7, 11, and 15: A circulation line 108 (discharge portion) is provided with a deaerator 110 in the middle of the line 108. The English Translation of the patent cites that the deaerator removes dissolved gas (in the form of bubbles)

Regarding 8: Figure 1 illustrates that the discharge portion is configured to discharge the process solution to local region in the surface of the substrate.

Regarding claims 9 and 10: Pump 109 is a discharge mechanism which moves the discharge portion during the processing of the substrate.

The motivation to provide the discharge portion and deaerator of Kiyobumi in the apparatus of Kiyobumi 10-223585 and Fumio et al is to suppress the generation of bubbles in-situ.


Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide the discharge portion with a deaerator.

Art Unit: 1763

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R MacArthur
Patent Examiner
Art Unit 1763

April 17, 2005